

Municipal Governments and Sustainable Communities:
A BEST PRACTICES GUIDE 2003
(Excerpts related to Sustainable Transportation)

FCM-CH2M HILL
Sustainable Community Awards

CH2MHILL



Canada

(Complete copies of this Guide may be downloaded from <http://kn.fcm.ca>)





FCM-CH2M HILL Sustainable Community Awards 2003 Winners

SUSTAINABLE TRANSPORTATION

City of Ottawa, Ontario

The O-Train: Light Rail Pilot Project1

FCM-CH2M HILL Sustainable Community Awards 2003 Submissions

SUSTAINABLE TRANSPORTATION

City of Brampton, Ontario

Biodiesel Fuel4

City of Mississauga, Ontario

Towards an Idle-Free Zone4

City of Montreal, Quebec

Saint-Laurent Commuter Management Centre4

City of Toronto, Ontario

Accessible Taxicab Programme4

Regional Municipality of Waterloo, Ontario

Alternative Fuels for Waterloo Region5

Greater Vancouver Regional District (GVRD), British Columbia

Brunette-Fraser Integrated Utility Greenway Pilot5

Regional Municipality of Halifax, Nova Scotia

Blueprint for a Bicycle Friendly HRM5

2003 Winners

SUSTAINABLE TRANSPORTATION

The O-Train: Light Rail Pilot Project

Population: 774,072

SUMMARY

The O-Train is the City of Ottawa's first experience with light rail transit. The O-Train travels an eight-kilometre length of existing CP Rail freight line, passing five stations (two of which provide access to the city's bus system), two bridges, and using a 600-metre tunnel beneath Dow's Lake. The line serves one of the city's two universities, a major employment centre, and a shopping mall. The city initiated the project to assess the feasibility of using an existing freight rail corridor for rapid transit and to analyze the potential of a larger-scale light rail network. The O-Train has improved access to the other parts of the city's transit network and daily ridership has reached 6,300 passengers, removing approximately 2,200 car trips each day. Future expansion plans for the O-Train have been proposed as a high priority.

BACKGROUND

By 2021, the City of Ottawa's population is projected to increase by 50 per cent, from 800,000 to 1.2 million people. Its new official plan, adopted in May 2003, targets a 30 per cent transit modal share, compared to the current 17 per cent, as one of its objectives.

Ottawa 20/20 is the city's long-term growth management strategy. It incorporates individual sustainable development plans that cover environment and transportation, heritage, arts, economics, and human services. The city also participates in FCM's Partners for Climate Protection (PCP) initiative. Prior to amalgamation with 11 other municipal governments and the Regional Municipality of Ottawa-Carleton (RMOC) in January 2001, the former City of Ottawa was the first municipal government in Canada to complete all five PCP milestones. Since amalgamation, the new city has incorporated much of the milestone work into its environment plan.

PROJECT DEVELOPMENT

In August 1998, the former RMOC council directed its staff to develop a pilot project for light rail. After a year-long study of the existing transit infrastructure, research into the types of trains available, and an analysis of ridership potential, the project's budget was approved in the fall of 1999.

Several circumstances worked in favour of the light-rail project. An existing, lightly-used freight railway line was available, and regional and city council supported the project each step of the



way. "There is also a human fascination with trains," said Gordon Diamond, transit services director at OC Transpo, the city's transit authority. "Over the years, there have been lots of people who wanted to see rail introduced."



"While many people have been involved with this project, mayor [Bob] Chiarelli has been its most consistent and strongest supporter from the beginning," said Mr. Diamond. Ottawa, at 3,500 square kilometres, is the largest city "geographically" in Canada and the population is reaching a critical mass that could support a rapid transit system. "If you don't want gridlock you have to look at moving people in a different way," Mr. Diamond continued, "so I have to give mayor Chiarelli a lot of credit for his vision when he was the regional chair."

City and transit officials began a marketing campaign for the O-Train a full year before the project began. Project partners actively encouraged comments from community and advocacy groups, and the general public was invited to share its views during city meetings and Ottawa 20/20 sessions and workshops.

PROJECT IMPLEMENTATION

The O-Train's eight-kilometre track runs north to south from the city's downtown with stops at one of the city's two universities, two major employment centres, and a large shopping mall. At each end, the O-Train is connected to the Transitway — the city's bus rapid transit system.

The existing track is owned by the Canadian Pacific Railway (CPR), but was seldom used and is in poor condition. "The freight railway was built in the 1800s," said Mr. Diamond. "By North American standards, that's ancient." The track also crosses the Canadian National line used by VIA Rail for the Ottawa to Toronto service and an active freight line operated by the Ottawa Central Railway. Track reconstruction and the construction of rail stations and additions to the city's transit network took place throughout 2001. The work was done in partnership and through contracts with:

- CPR to upgrade the line, build the rail stations, and upgrade the maintenance facilities;
- Bombardier to provide, commission, and maintain the trains; and
- AR Concepts to develop and install a signalling system.



CITY OF OTTAWA, ONTARIO

The city was required by law to develop an operating plan and it worked closely with Transport Canada to adhere to regulations under the Railway Safety Act. The operating plan included rules, emergency plans, employee training programs, and a safety management system (SMS). “We don’t own the track,” said Mr. Diamond, “but we are a federally-constituted, fully-fledged railway, just like the big boys.”

Bombardier Talent DMU trains were selected and each one seats 137 passengers, with standing room for an additional 150. The trains are equipped with two diesel engines that use Clear No. 1 diesel fuel, which contains less sulphur than other grades of fuel.

The existing signal system underwent a complete overhaul, and an Indusi automatic braking system was installed. Signal hardware and wiring were renovated, and locations were changed to provide efficient signal communication to the light rail trains. “We introduced a lot of new technology, not just the trains,” said Mr. Diamond. “The Indusi system is a magnetic braking system, so even if an operator tried to go through a red signal, it wouldn’t let you.”

The SMS required a great deal of review by the Government of Canada and the railway industry to ensure the safety of employees, contractors, the public, and the environment. The O-Train’s security system falls under the SMS and was developed in co-operation with Ottawa Police Services and the Women’s Initiative for a Safe Environment (WISE). It includes closed-circuit television, high quality lighting, and emergency call boxes.

Requirements had to be met under the provincial Environmental Assessment Act and the Canadian Environmental Assessment Act. Site-specific assessment activities also had to be performed to satisfy the requirements of the National Capital Commission and Public Works and Government Services Canada.

OC Transpo bus drivers, having completed an intensive six-week training course presented by CANAC, a consulting firm associated with Canadian National, operate the trains. “The operators were successful to the point that the CANAC instructors said that many of them could now take over their jobs,” said Mr. Diamond. This was a major departure from any other light rail system in North America that falls under federal jurisdiction, as operators are typically locomotive engineers who already meet the regulatory standards. This approach made better use of OC Transpo’s existing human resources pool. A good example came in the spring of 2003 when OC Transpo shut the rail line down for a few weeks while a new continuous welded rail was installed. “Light rail operators were used to drive the temporary and parallel O-Bus service to replace the trains,” Mr. Diamond said.

The O-Train began operation in September 2002, and ridership was free for the first two months. The city funded the project entirely, at a capital cost of \$29 million, including an operating budget of \$8 million for two years. “We deliberately chose the north-south track to get the biggest bang for our buck with regard to ridership for the minimum investment,” Mr. Diamond explained. “If we had had to put in a whole new railway, it wouldn’t have gone ahead.”

Municipal and transit officials from several U.S. cities have visited the O-Train since it began operating, and Mr. Diamond described their astonishment at what has been accomplished. “When we tell them we put the whole thing in and ran it for two years for \$29 million Canadian — that’s only about \$22 million U.S. — they think we’re joking.”

RESULTS

- 6,300 passengers ride the O-Train each day, with about two-thirds of these trips to and from Carleton University. Surveys show that, if the O-Train did not exist, about 1,500 of these passengers would have used other modes of transportation or not made the trip at all.
- Fuel consumption is 40 per cent less than the average bus fuel consumption per passenger space.
- Approximately 2,200 unnecessary cars have been removed from the city’s downtown core.
- The O-Train has been in operation 99 per cent of the time, compared to 70 per cent with bus service. The O-Train is wheelchair accessible and an elevator was installed at one station to meet the needs of passengers with physical disabilities.
- Annual revenue is approximately \$1 million with a revenue/cost ratio of 24.5 per cent, which compares favourably to the city’s initial objective of a 27 to 32 per cent revenue/cost ratio.

LESSONS LEARNED

- Political leadership and direction were essential. The project began with direction from the former regional council and its success has reinforced city council’s decision to proceed with a more comprehensive rapid transit expansion plan. The plan will identify potential transit corridors and vehicle technology options (including bus and rail options) and will develop an integrated rapid transit network.



- Public input and support were critical. The city and OC Transpo kept a running dialogue with community and advocacy groups, schools, and the general public.
- Personal contact with key government agencies and the railway industry proved beneficial. “At first, we got the typical bureaucratic answers, but once we met with them face-to-face and walked the track, there was much more co-operation,” said Mr. Diamond.
- The Bombardier trains were a good choice for the pilot project, but they were designed for long distance commuter service. As the city proceeds with its rapid transit expansion plan, other vehicles and propulsion systems will be considered. “If we used the DMU trains in the downtown core, we would need to build platforms for passengers to get in,” Mr. Diamond explained. “The newer trains we are looking at can be mixed with traffic, are low-floor, and are much lighter.”

RELATED AND FUTURE INITIATIVES

With the phase-out of Grade 13 in Ontario secondary schools, the fall of 2003 will see the first of the ‘double cohort’ students attending university. “We anticipate our current ridership to increase because of that,” said Mr. Diamond. “We will target our advertising to that audience because it’s important to engage them at an early age and prevent them from buying that first car.”

Transportation consultants are now studying a variety of options under the city’s rapid transit expansion plan, which includes expansion of light rail service to other parts of the city. The city was also one of 15 municipal governments chosen to receive funding under Transport Canada’s Urban Transportation Showcase Program.

The city has also applied for and received grants and a loan from FCM’s Green Municipal Funds for a number of projects, including a grant to study a light rail transit extension. The study will include the benefits and the costs of extending light rail rapid transit service along existing rail lines in Ottawa. The study will recommend whether to extend rapid transit service to existing and future suburban areas or wait until a more appropriate time. Other initiatives range from an audit and retrofit strategy for city buildings, a feasibility study of new technologies to treat landfill leachate, an assessment of the potential of building a soccer field and a wet pond for stormwater run-off management, and a feasibility study on using a private sector, central composting facility.

PARTNERS AND COLLABORATION

Internal

City of Ottawa Infrastructure Services

External

Transport Canada

Human Resources Development Canada

Canadian Pacific (CP) Railway

Canadian National (CN) Railway

VIA Rail

Carleton University

Public Works and Government Services Canada

National Capital Commission

Ottawa Police Services

Women’s Initiative for a Safe Environment

Transport 2000

Various other citizens and advocacy groups and community associations

The city and OC Transpo took the lead in consultations with the public and the media. Communications also targeted community and residential groups and schools, through the Operation Lifesaver safety program, as well as through a TransArt program, which recruited local artists to provide artwork for the stations.

The city hired a project manager from the rail industry to run the railway and a superintendent who handled the operational issues and who dealt with CP, CN, and Transport Canada.

CONTACT INFORMATION

Gordon Diamond

Transit Services Director, OC Transpo

Phone: (613) 842-3636 x2271

Fax: (613) 741-7359

E-mail: Gordon.Diamond@ottawa.ca

Helen Gault

Transit Scheduling and Services Development Manager,
OC Transpo

Phone (613) 842-3636 x2435

E-mail: Helen.Gault@ottawa.ca

Web sites: www.ottawa.ca and www.octranspo.com



**SUSTAINABLE
TRANSPORTATION**
**CITY OF BRAMPTON,
ONTARIO**

Population: 325,428

Biodiesel Fuel

The City of Brampton has switched the fuel type of its entire municipal fleet—219 vehicles—to biodiesel. Beginning with the 2002 summer season, the city tested B20, a blend of 20 per cent virgin soybean oil and 80 per cent diesel. Initial tests revealed that the B20 blend reduced emissions by almost one-quarter, so the blend was increased to 50 per cent for the remainder of the summer. Biodiesel provides more oxygen than regular diesel fuel, producing a slower, cooler, and more complete burn in an engine's combustion chambers. The end result is lower exhaust emissions without any loss in power or efficiency. Brampton Transit will likely switch to biodiesel later in 2003.

Contact: Alex MacMillan, Commissioner, (905) 874-2503

CITY OF MISSISSAUGA, ONTARIO

Population: 612,925

Towards an Idle-Free Zone

The City of Mississauga focused on reducing emissions from vehicle idling in its year-long anti-idling campaign. The city partnered with Natural Resources Canada's (NRCAN) Office of Energy Efficiency (OEE) as part of its national pilot project, Idle-Free Zone, and carried out awareness campaigns targeted at an estimated 2,725 drivers arriving at municipal buildings, schools, and other facilities. The city used telephone surveys, new signage, and information cards distributed on car windshields to get the information across. The combination of signs and personal contact at elementary schools was particularly successful where the frequency of idling has decreased from 54 per cent to 29 per cent. As a result of the campaign, Mississauga Transit has implemented an amended idling policy for its drivers, reducing idling time from 15 minutes to five.

Contact: Martin Powell, Commissioner, (905) 896-5112

Award Submissions

CITY OF MONTRÉAL, QUÉBEC

Population: 1,039,534

Saint-Laurent Commuter Management Centre

Before amalgamation with the City of Montréal, the City of Saint-Laurent was the second-largest industrial city in Québec, with as many as 110,000 single-occupant vehicle commuters each day. The Saint-Laurent Commuter Management Centre has developed a number of employer programs designed to reduce single-occupant vehicle traffic. For example, the centre developed employer carpooling programs, organized promotional activities through "Info-transport" booths set up at workplaces, and has worked with the Metropolitan Transit Agency to improve public transit service. For employers, these programs have helped reduce the expense of providing additional parking spaces and have made it easier for them to attract and retain employees. The city of Montréal also stands to gain from reduced costs to its road infrastructure.

**Contact: Claudine Beaudoin, Acting Director,
(514) 855-6000, Ext. 4838**

CITY OF TORONTO, ONTARIO

Population: 2,481,494

Accessible Taxicab Programme

The City of Toronto responded to the growing need for more accessible transportation needs—for persons with physical disabilities and the elderly, in particular—by providing incentives to taxi operators. The city invited qualified individuals to attend a four-day intensive Accessible Taxicab Owner Training Course. The course emphasized the legal and business responsibilities of owners and drivers and included hands-on training in equipment handling, passenger assistance, sensitivity awareness, and defensive driving techniques. As of early 2003, there were 75 additional accessible taxicabs on the road and over 200 qualified taxicab drivers, and the program has increased service to many people in the community. In addition, the city hopes to make the program economically self-sufficient by licensing its training course to other municipal governments.

Contact: Paula Dill, Commissioner, (416) 397-4154



REGIONAL MUNICIPALITY OF WATERLOO, ONTARIO

Population: 86,543

Alternative Fuels for Waterloo Region

Between 2000 and 2002, the Regional Municipality of Waterloo issued 20 air quality advisories, seven days more than the previous five years combined. To reduce emissions from the vehicle sector, the region completed an emissions inventory of its entire fleet and used the information to develop a number of recommendations. The highest priority options included using ethanol in the municipal fleet and ultra-low sulphur diesel (ULSD) for the transit fleet. The use of ethanol began immediately, and new muffler systems will be installed in the buses before the region makes the switch to ULSD. These initiatives will reduce GHG emissions by 20 per cent.

Contact: Rob Bromley, Health Promotion Officer, (519) 883-2008 Ext. 5404

GREATER VANCOUVER REGIONAL DISTRICT (GVRD), BRITISH COLUMBIA

Population: 2,028,996

Brunette-Fraser Integrated Utility Greenway Pilot

As part of its larger Regional Greenway vision, the GVRD assessed several utility corridors, which had been designed for service vehicles, for routing alternatives that could serve both utility and greenway functions. A new 2.4-kilometre section of greenway was designated along an existing service road as part of a sewer line construction project in the Lake City Interceptor-Brunette River Corridor. Following construction, the road was resurfaced to accommodate cyclists and walkers. Aside from the many social and environmental benefits of the project, the GVRD has also benefited financially. Independent land purchase for the route in the Lake City Interceptor section, owned by the City of Burnaby, would have cost approximately \$365,000 versus the \$195,000 spent using the integrated approach.

Contact: Paul Skydt, Planning and Stewardship Division Manager, Parks Department, (604) 432-6357

REGIONAL MUNICIPALITY OF HALIFAX, NOVA SCOTIA

Population: 359,111

Blueprint for a Bicycle Friendly HRM

In 2000, the newly amalgamated Regional Municipality of Halifax was beginning to experience the negative impacts of urban sprawl on its existing transportation network. Halifax is one of Canada's oldest cities, with narrow city streets, broad boulevards, and country trails. The Blueprint for a Bicycle Friendly HRM, developed by the Bikeways Task Force, addressed this range of infrastructure by implementing a framework for transportation department decisions, selecting financing options, and designing events and pilot projects that promoted cycling. Transportation demand management measures included installing a set of bicycle lockers at a suburban transit terminal to link rural commuters who work in the downtown core and hiring a full-time cycling and pedestrian co-ordinator to oversee many of the initiatives.

Contact: Stephen King, Manager-Senior Advisor, Strategic & Sustainable Resource Management Services, (902) 490-6188